

IN THE CLAIMS:

Please **AMEND** the claims as follows:

Please **CANCEL** claims 18 and 20-26.

1. (Previously Amended) A computer-readable medium containing a data structure defining a query definition, the data structure including:

a query specification including query text and parameters, the parameters having values that may be set by a user before or when the query definition is executed;

a results transform that transforms results of executing the query specification into a canonical format; and

a data source identifier that identifies a data source to be used when the query specification is executed;

wherein the data structure encapsulates the query definition.

2. (Original) The computer-readable medium of claim 1 wherein the results transform is an XSL transform.

3. (Original) The computer-readable medium of claim 1 wherein the data structure is represented in XML format.

4. (Previously Amended) The computer-readable medium of claim 1 wherein the data structure conforms with the following data type definition of XML:

```
<!DOCTYPE lens [  
  <!ELEMENT query (#PCDATA) REQUIRED>  
  <!ELEMENT params (param+)>  
    <!ELEMENT param (allowedvalues | props)*>  
    <!ATTLIST param name CDATA REQUIRED>  
    <!ATTLIST param value CDATA REQUIRED>  
  <!ELEMENT formats (format+) REQUIRED>
```

```

        <!ELEMENT format (#PCDATA)>
        <!ATTLIST format name CDATA REQUIRED>
        <!ELEMENT serverurl (#PCDATA) REQUIRED>
    <!ELEMENT sort (#PCDATA)>
        <!ATTLIST sort var CDATA REQUIRED>
        <!ATTLIST sort dir (ASC|DESC) REQUIRED>

    <!ELEMENT markup (p | br)*>
    <!ELEMENT p>
    <!ELEMENT br>

    <!ELEMENT crosslink (#PCDATA)>
        <!ATTLIST crosslink lens CDATA REQUIRED>
        <!ATTLIST crosslink param CDATA REQUIRED>
        <!ATTLIST crosslink value CDATA REQUIRED>
        <!ATTLIST crosslink display CDATA>
]>

```

5. (Original) The computer-readable medium of claim 1 wherein the data structure includes a name.

6. (Original) The computer-readable medium of claim 1 wherein the data structure includes a description.

7. (Original) The computer-readable medium of claim 1 wherein the data structure includes a version.

8. (Original) The computer-readable medium of claim 1 wherein the data structure includes an author.

9. (Original) The computer-readable medium of claim 1 wherein the data structure includes a date last modified.

10. (Original) The computer-readable medium of claim 1 wherein the data structure can be used by different application programs.

11. (Previously amended) A method in a computer-system for performing a query, the method comprising:

receiving an indication of a query definition encapsulated by a data structure, the query definition including a query specification and a results transform;
identifying a data source from the query specification;
requesting execution of the query specification with the identified data source to generate results in a raw format; and
transforming the generated results in the raw format to a canonical format using the results transform.

12. (Previously Amended) The method of claim 11 wherein the query definition includes an indication of the data source and the identifying of the data source includes retrieving the indication from the query definition.

13. (Previously Amended) The method of claim 11 wherein the query specification includes an indication of a parameter for the query specification and the method includes receiving a value for the parameter, wherein the requesting of the execution of the query specification indicates the value of the parameter.

14. (Original) The method of claim 11 wherein the query specification includes an indication of a parameter for the query specification and a value for the parameter.

15. (Previously Amended) The method of claim 14 including updating the value of the parameter in response to input from a user, wherein the value is stored with the query specification.

16. (Original) The method of claim 11 wherein the results transform is an XSL transform.

17. (Original) The method of claim 11 wherein the results transform includes instructions for display of the generated results.

18. (Cancelled)

19. (Currently Amended) The ~~computer-readable medium~~ method of claim ~~11~~ 18 wherein the data structure is represented by the following XML format:

```
<!DOCTYPE FORMATTING [  
  <!ELEMENT (table)>  
  <!ELEMENT value #PCDATA>  
    <!ATTLIST value color CDATA>  
    <!ATTLIST value style (b|i|b|p)>  
    <!ATTLIST value size CDATA>  
    <!ATTLIST value face CDATA>  
    <!ATTLIST value dynamic (true|false)>  
  <!ELEMENT table (tr*)>  
    <!ATTLIST table name CDATA #REQUIRED>  
    <!ATTLIST table border CDATA>  
    <!ATTLIST table cellpadding CDATA>  
    <!ATTLIST table cellspacing CDATA>  
    <!ATTLIST table bordercolor CDATA>  
    <!ATTLIST table valign CDATA>  
  <!ELEMENT tr (td*)>  
    <!ELEMENT td (value | table)*>  
      <!ATTLIST td id CDATA #REQUIRED>  
      <!ATTLIST td colspan CDATA>  
      <!ATTLIST td rowspan CDATA>
```

```

        <!ATTLIST td align CDATA>
        <!ATTLIST td valign CDATA>
    <!ELEMENT sort (#PCDATA)>
        <!ATTLIST sort var CDATA REQUIRED>
        <!ATTLIST sort dir (ASC|DESC) REQUIRED>

    <!ELEMENT markup (p | br)*>
    <!ELEMENT p>
    <!ELEMENT br>

    <!ELEMENT crosslink (#PCDATA)>
        <!ATTLIST crosslink lens CDATA REQUIRED>
        <!ATTLIST crosslink param CDATA REQUIRED>
        <!ATTLIST crosslink value CDATA REQUIRED>
        <!ATTLIST crosslink display CDATA>
]>

```

20. (Cancelled)
21. (Cancelled)
22. (Cancelled)
23. (Cancelled)
24. (Cancelled)
25. (Cancelled)
26. (Cancelled)

27. (Previously Amended) A computer-readable medium containing a data structure defining a query definition, the data structure comprising:

a query specification including query text that is an expression of a query; and
a data source identifier that identifies a data source to be used when the query specification is executed;

whereby the data structure encapsulates the query definition that can be used by a plurality of different application programs to define a query that is to be executed using the query specification and the data source identified by the data source identifier.

28. (Original) The computer-readable medium of claim 27 wherein the data structure further includes a results transform for transforming results of the execution of the query to a canonical format.

29. (Original) The computer-readable medium of claim 28 wherein the results transform is an XSL transform.

30. (Original) The computer readable medium of claim 27 wherein the data structure is represented in XML format.

31. (Previously Amended) The computer-readable medium of claim 27 wherein the query specification includes one or more parameters, each of the one or more parameters having one or more values that may be set by a user before or when the query is executed.

32. (Previously Amended) The computer-readable medium of claim 31 wherein the query specification includes one or more possible values for one or more of the parameters.

33. (Previously Amended) The computer-readable medium of claim 27 wherein the query specification includes one or more sort variables for ordering of the results of the query.

34. (Previously Amended) The computer-readable medium of claim 27 wherein execution of the query produces the same query results for each application program.

35. (Previously Amended) A computer-readable medium containing instructions for controlling computer systems to execute queries by a method comprising:

receiving a query definition that includes a query specification and a data source identifier, the query definition being encapsulated by a data structure that can be accessed by a plurality of different application programs; and
requesting execution of the query definition to generate results.

36. (Previously Amended) The computer-readable medium of claim 35 wherein the query definition includes a results transform, the method further including using the results transform to transform the generated results from a raw format to a canonical format.

37. (Original) The computer-readable medium of claim 36 wherein the results transform is an XSL transform.

38. (Original) The computer-readable medium of claim 35 including transforming the generated results from a raw format to a canonical format.

39. (Original) The computer-readable medium of claim 35 wherein the query definition is a lens file.

40. (Original) The computer-readable medium of claim 35 wherein the query definition is stored in a single file.

41. (Original) The computer-readable medium of claim 35 wherein the results are in a canonical format.

42. (Previously Amended) The computer-readable medium of claim 35 wherein the requesting of execution of the query includes invoking a function of a first interface that returns a second interface for retrieving the results a portion at a time.

43. (Previously Amended) The computer-readable medium of claim 42 wherein the first API is the ILens interface.

44. (Original) The computer-readable medium of claim 42 wherein the second interface is the IChunks interface.

45. (Previously Amended) A computer system for executing queries, the computer system comprising:

means for receiving a data structure encapsulating a query definition that includes a query specification and a data source identifier; and

means for requesting execution of the query definition to generate results using the query specification and a data source identified by the data source identifier.

46. (Original) The computer system of claim 45 wherein the query definition includes a results transform and including using the results transform to transform the generated results from a raw format to a canonical format.

47. (Original) The computer system of claim 46 wherein the results transform is an XSL transform.

48. (Original) The computer system of claim 45 including transforming the generated results from a raw format to a canonical format.

49. (Original) The computer system of claim 45 wherein the query definition is a lens file.

50. (Original) The computer system of claim 45 wherein the query definition is stored in a single file.

51. (Original) The computer system of claim 45 wherein the results are in a canonical format.

52. (Withdrawn) A method in a computer system for generating a data structure defining a query definition, the method comprising:

storing in the data structure a query specification including query text that is an expression of the query; and

storing in the data structure a data source identifier that identifies a data source to be used when the query definition is executed

whereby the data structure is in a portable format that can be used by a plurality of different application programs to execute the query definition.

53. (Withdrawn) The method of claim 52 including storing in the data structure a results transform for transforming results of the execution of the query definition to a canonical format.

54. (Withdrawn) The method of claim 52 including storing in the data structure indications of parameters whose values may be set when the query definition is executed.

55. (Withdrawn) The method of claim 54 including storing in the data structure possible values for the parameters.

56. (Withdrawn) The method of claim 54 wherein the query text may be modified before execution when a value for a parameter is not specified.

57. (Withdrawn) The method of claim 52 including storing in the data structure sort variables for controlling ordering of the results of the query.

58. (Withdrawn) A method in a computer system for adjusting a query expression based on a parameter value not being specified at execution time, the method comprising:

receiving a query expression along with an indication of a parameter that may be specified before executing the query expression; and

when the query expression is to be executed without a value of the parameter being specified,

modifying the query expression to remove a portion of the query expression that depends on the parameter; and

executing the modified query expression.

59. (Withdrawn) The method of claim 58 wherein the query expression includes query sub-expressions and the modifying includes removing a query sub-expression that depends on the parameter.

60. (Withdrawn) The method of claim 58 wherein the query sub-expressions are combined by a logical-AND.

61. (Withdrawn) The method of claim 58 wherein the query sub-expressions are combined by a logical-OR.

62. (Withdrawn) A computer system for adjusting a query expression based on a parameter value not being specified at execution time, the computer system comprising:

means for receiving the query expression along with an indication of a parameter, the query expression having query sub-expressions; and

means for modifying the query expression to remove a query sub-expression that depends on the parameter when the query expression is to be executed without a value of the parameter being specified; and

means for executing the modified query expression.

63. (Withdrawn) The computer system of claim 62 wherein the query sub-expressions are combined by a logical-AND.

64. (Withdrawn) The computer system of claim 62 wherein the sub-expressions are combined by a logical-OR.

65. (Previously Amended) The computer-readable medium as recited in claim 1, wherein the query definition can be executed via an API.

66. (Previously Amended) The computer-readable medium as recited in claim 65, wherein the API provides one or more functions for accessing the query definition.

67. (Previously Amended) The computer-readable medium as recited in claim 65, wherein the API provides at least one of a function for loading a query definition, a function for setting one or more values of one or more of the parameters of the query definition, and a function for executing the query definition.

68. (Previously Presented) The computer-readable medium as recited in claim 1, wherein each of the parameters includes an ignore attribute, the ignore attribute indicating whether the parameter is to be used in the query.

69. (Previously Presented) The computer-readable medium as recited in claim 1, wherein one or more of the parameters has one or more associated allowed values.

70. (Previously Presented) The computer-readable medium as recited in claim 1, further comprising:
a sort indicator indicating a manner in which the results of executing the query are to be sorted.

71. (Previously Presented) The computer-readable medium as recited in claim 1, wherein the canonical format includes at least one of a value, table, and markup tags.

72. (Previously Presented) The computer-readable medium as recited in claim 71, wherein the value has at least one of a color, style, size, font, and dynamic attribute, the dynamic attribute indicating whether the value is dynamically generated by executing the query specification.

73. (Previously Presented) The computer-readable medium as recited in claim 1, wherein the canonical format includes a sort tag indicating a variable or parameter according to which the results are to be sorted.

74. (Previously Amended) The computer-readable medium as recited in claim 73, wherein the results are to be sorted according to the variable or parameter when a specified value is selected or specified by a user for the variable or parameter.

75. (Previously Presented) The computer-readable medium as recited in claim 1, wherein the canonical format includes a cross link, the cross link indicating one or more query definitions having a particular value for one or more of the parameters.

76. (Previously Presented) The computer-readable medium as recited in claim 1, wherein the canonical format comprises:
a table element having one or more row elements and one or more columns;
for each of the one or more row elements, one or more data elements, each data element corresponding to one of the one or more columns of the table element; and
each data element having one or more values or table elements with row elements and data elements.

77. (Previously Amended) The method as recited in claim 11, wherein the identifying of the data source includes obtaining a data source identifier identifying the data source via an API.

78. (Previously Amended) The method as recited in claim 11, wherein the query definition can be executed via an API.

79. (Previously Amended) The method as recited in claim 78, wherein the API provides one or more functions for accessing the query definition.

80. (Previously Amended) The method as recited in claim 78, wherein the API provides at least one of a function for loading a query definition, a function for setting one or more values of one or more parameters of the query definition, and a function for executing the query definition.

81. (Previously Presented) The method as recited in claim 11, wherein each parameter of the query definition includes an ignore attribute, the ignore attribute indicating whether the parameter is to be used in the query.

82. (Previously Presented) The method as recited in claim 11, wherein one

or more parameters of the query definition has one or more associated allowed values.

83. (Previously Presented) The method as recited in claim 11, wherein the query definition includes a sort indicator indicating a manner in which the results of executing the query are to be sorted.

84. (Previously Presented) The method as recited in claim 11, wherein the canonical format includes at least one of a value, table, and markup tags.

85. (Previously Presented) The method as recited in claim 84, wherein the value has at least one of a color, style, size, font, and dynamic attribute, the dynamic attribute indicating whether the value is dynamically generated by executing the query specification.

86. (Previously Presented) The method as recited in claim 11, wherein the canonical format includes a sort tag indicating a variable or parameter according to which the results are to be sorted.

87. (Previously Amended) The method as recited in claim 86-, wherein the results are to be sorted according to the variable or parameter when a specified value is selected or specified by a user for the variable or parameter.

88. (Previously Presented) The method as recited in claim 11, wherein the canonical format includes a cross link, the cross link indicating one or more query definitions having a particular value for one or more parameters of the query definition.

89. (Previously Presented) The method as recited in claim 11, wherein the canonical format comprises:
a table element having one or more row elements and one or more columns;
for each of the one or more row elements, one or more data elements, each data element corresponding to one of the one or more columns of the table element; and
each data element having one or more values or table elements with row elements and data elements.